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| 10/576,869  | 03/08/2007  | Peter Holzheu        | 41034/44881         | 7881             |
| 23646 7590 03/04/2009<br>BARNES & THORNBURG LLP<br>750-17TH STREET NW<br>SUITE 900<br>WASHINGTON, DC 20006-4675 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| DRIGGERS-FOURNET, GWENDOLYN   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 4127  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/576,869

**Applicant(s)**

HOLZHEU, PETER

**Examiner**

GWENDOLYN FOURNET

**Art Unit**

4127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2007.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 06 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This communication is a first office action on the merits. Claims 1-12, as amended, are currently pending and have been considered below.

#### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/DE2004/002143, filed on 09/25/2004.

#### ***Claim Objections***

2. Claims 5-6, 9 and 11 are objected to because of the following informalities:
  - in claim 5, lines 3-4, the terms "pressure side" and "environment side" lack antecedent basis;
  - in claim 5, line 8, the recitation "pressure ride" should be changed to read -  
-pressure side--;
  - in claim 6, line 2, the recitation "the of least one" should be changed to  
read --the at least one--;
  - in claim 9, lines 4-5, the recitation "towards an inside" should be changed  
to read --toward an inside--; and
  - in claim 11, the phrase "the annular groove opens toward an outside" is  
unclear since outside is not defined.Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ekholm et al. (US 6,059,323).

Regarding claim 1, Ekholm et al. discloses a flanged joint (see figure 2a (1)) for a pressurized medium (column 2, lines 27-29, which disclose providing a seal against different pressures), the flanged joint comprising: a first component (21) and a second component (29) having an interior (see figure 2 below);

at least one flat gasket (see figure 2b (26a)) held between facing surfaces (see figure 2 below) of the first and second components;

an annular groove (see figure 2a (22)) and a radially opposed working diameter (see figure 2 below) located between the interior and the at least one flat gasket (see figure 2 below); and

at least one lamella ring (see figure 2 below) held in the annular groove and biased, essentially without a gap, against the working diameter (see figure 2 below).

Regarding claim 2, Ekholm further discloses the at least one lamella ring is held in the annular groove with little axial play (column 5, lines 15-41 which disclose the ring's axial misalignment limitations).

Regarding claim 3, Ekholm further discloses the at least one lamella ring is arranged in the annular groove parallel to a plane of flange surfaces of the at least one flat gasket (see figure 2a).

Regarding claim 4, Ekholm further discloses the at least one lamella ring includes a plurality of lamella rings arranged axially in series (see figure 2a).

Regarding claim 5, Ekholm further discloses the plurality of lamella rings includes at least one lamella ring facing the pressure side (see figure 2 below) and at least one lamella ring facing the environment side (see figure 2 below) and those rings being biased against the working diameter (see figure 2 below), and the plurality of lamella rings includes at least one lamella ring is biased against a bottom of the annular groove and axially arranged between the at least one lamella ring facing the pressure side and the at least one ring facing the environment side (see figure 2 below).

Regarding claim 10, Ekholm further discloses the first and second components include a radial overlapping area (see figure 2 below) such that one of the components includes an axially protruding annular collar (see figure 2 below) engaging a complementary, annular recess (see figure 2 below) of the other component, the other component having an inner circumferential surface forming the working diameter (see figure 2 below).

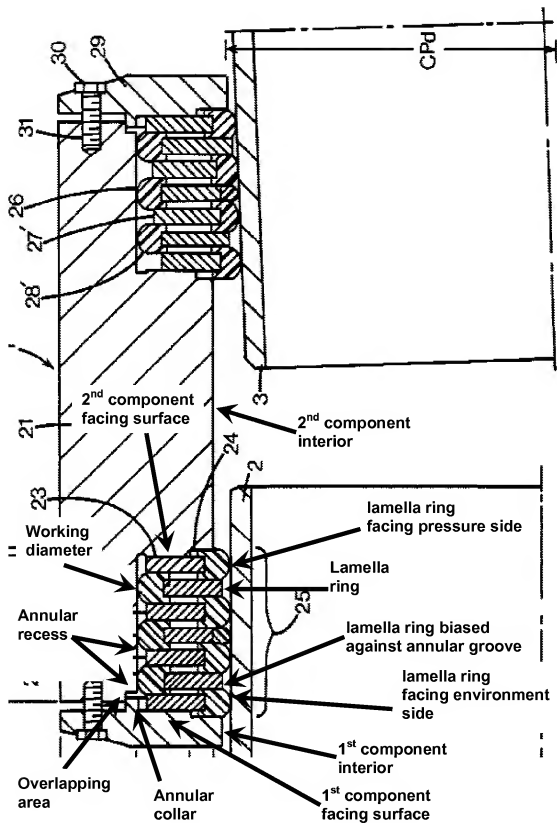


FIG. 2

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ekholm et al. (US 6,059,323), in further view of Kakehi (US 5,934,680).

Ekholm discloses all the structural elements of the claimed invention as recited in claim 1, and further discloses a lamella ring of a steel band (see figure 2c (27c), and column 8, lines 8-11, which disclose that inwardly facing sealing surface (27) has an annular metal ring, and column 3, line 39, which discloses that the metal is preferably steel) extending in one plane (see figure 2c).

Ekholm fails to disclose a single-turn lamella ring with an axial abutment opening.

However, Kakehi discloses a split seal ring (see figure 1A (1)) with an axial abutment opening (see figure 1A (2) and (2')).

Therefore, from the teachings of Kakehi, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coupling ring in Ekholm to include an abutment opening as taught by Kakehi for the convenience of mounting (column 1, lines 17-18).

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekholm et al. (US 6,059,323), in view of Kakehi (US 5,934,680), and in further view of Jacocks (US 2,202,492).

Regarding claims 7 and 8, the combination of Ekholm and Kakehi disclose all the structural elements of the claimed invention as recited in claim 1, and the single-turn disc-like lamella ring of a steel band, but fail to explicitly disclose the at least one lamella ring is a single-turn disk-like lamella ring of a steel band formed in a manner and form of a disk spring, wherein the single-turn disk-like lamella ring includes at least a pair of disk-like lamella rings having a conical form and axially opposing each other with respect to their conical form.

However, Jacocks discloses a gasket for a fluid coupling formed in a manner and form of a disk spring with a conical form (page 2, lines 4-5, which disclose a frustro conical gasket), wherein the single-turn disk-like lamella ring includes at least a pair of disk-like lamella rings (see figure 1, (16) and (16)) axially opposing each other with respect to their conical form (page 3, lines 30-33, which disclose a plurality of frustro-conical ring members inclined with respect to one another).



Therefore, from the teachings of Jacocks, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of the coupling ring in Ekholm and the split seal ring in Kakehi to include a frustro conical gasket as taught by Jacocks to include a plurality of frustro-conical gaskets as taught by Jacocks in order to relieve the coupling of multiple forces (page 1, lines 26-32).

9. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekholm et al. (US 6,059,323), in view of Kakehi (US 5,934,680), and in further view of Morgan (US 5,460,459).

Regarding claims 9 and 12, the combination of Ekholm and Kakehi disclose all the structural elements of the claimed invention as recited in claim 1 and the single-turn disc-like lamella ring of a metal band wherein the metal band is a steel band, but fail to explicitly disclose wherein the at least one lamella ring is a double-turn lamella ring of constant width, and ends of double-turns of the ring protrude towards an inside or towards an outside in a relaxed state of the double-turn lamella ring, such protrusion departing from a circular form provided by a remainder of the double-turn lamella ring, and the ends are in alignment with the circular form of the double- turn lamella ring in a biased state.

However, Morgan discloses a fitting wherein the at least one lamella ring (see figure 9 (20)) is a double-turn lamella ring (column 1, lines 39-41, which disclose single or multiple turns) of a metal band (column 3, line 35, which discloses member (20) made of metal) of constant width (see figure 3), and ends

of double-turns of the ring protrude towards an inside or towards an outside in a relaxed state of the double-turn lamella ring (see figure 9, at (42) and (44)), such protrusion departing from a circular form provided by a remainder of the double-turn lamella ring, and the ends are in alignment with the circular form of the double- turn lamella ring in a biased state (see figure 12).

Therefore, from the teachings of Morgan, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of the coupling ring in Ekholm and the steel split seal ring in Kakehi to include more than one complete turn as taught by Morgan to produce a firmer wedging engagement against both the groove and the pipe (column 3, lines 12-14, and lines 23-30).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ekholm et al. (US 6,059,323), in further view of Iida et al. (US 6,443,502).

Ekholm discloses all the structural elements of the claimed invention as recited in claims 1 and 10, but fails to disclose the annular groove opens toward an outside and is formed in the axially protruding annular collar.

However, Iida discloses an annular groove (see figure 5 (51)) opening toward an outside (see figure 5) and is formed in the axially protruding annular collar (see figure 5 (52)).

Therefore, from the teachings of Iida, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coupling's

annular groove in Ekholm to open towards the outside as taught by lida in order to sufficiently restrict leakage into the air (column 2, lines 23-26).

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Mattingly et al. (US 5,141,448) for double turned rings.

Bach (US 1,820,644) for double turned ring.

Takeuchi et al. (US 7,434,849) for split seal.

Wirth et al. (US 6,863,277) for split ring.

Laird (US 1,825,962) for frustro-conical gaskets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWENDOLYN FOURNET whose telephone number is (571)270-5740. The examiner can normally be reached on Mon-Fri 7:30a-5:00p; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynda Jasmin can be reached on (571)272-6782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GDF/  
Examiner Art Unit 4127

/Lynda Jasmin/  
Supervisory Patent Examiner, Art Unit 4127